

REMARKS

Claims 1-9 and 13-23 are pending and at issue in this application, with claims 1, 21 and 23 being independent claims. By this response Applicants hereby cancel claims 10-12, amend claims 1, 14 and 17, and add new claims 21-23. Applicants respectfully request reconsideration and favorable action in this case.

Specification Objections

The Examiner objects to the use of the term "mobile end device" within claim 11, as not being supported by the specification. Applicants respectfully direct the Examiner's attention to paragraph [0027] of the specification, which discloses an "end device" and further describes that the "end device" can be a "mobile service or maintenance terminal." Thus, Applicants submit that at least paragraph [0027] provides support for a "mobile end device," as recited in claim 11, and request withdrawal of this objection.

Claim Objections

The Examiner objects to claims 4, 6, and 14 as lacking antecedent basis. In particular, the Examiner objects to the use of "the wiring diagram" in line 2 of claim 4 and of "the machine control" in line 4 of claim 6. Applicants point out that claim 4, as amended in the Preliminary Amendment dated February 28, 2005, does not include the phrase "the wiring diagram." The application (and the publication thereof, dated July 6, 2006) recites "the circuit diagram." Further, the phrase "a circuit diagram" is introduced in the subject matter of independent claim 1 and, because claim 4 depends from claim 1, claim 4 has adequate antecedent basis. Likewise, claim 6 recites "the machine control system." Independent claim 1 recites a method for displaying data of "a machine control system." Claim 6 depends from claim 1 and thus, claim 6 has adequate antecedent basis.

The Examiner also objects to the phrase "the corresponding state variable" in claim 14. With this response Applicants amend claim 14 to recite "a corresponding state variable" in accordance with the suggestion of the Examiner.

The Examiner objects to claims 10-12 as referring to three sets of claims to different features (i.e., device, method and system). With this response, Applicants cancel claims 10-12, thereby rendering this objection moot.

Reconsideration and withdrawal of these claim objections is respectfully requested.

35 U.S.C. § 112 Rejection

Claims 1-20 are rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the Examiner points to the phrase "the electrical connection" in line 6, of claim 1, as having insufficient antecedent basis. With this response, Applicants amend claim 1 to recite "an electrical connection..." to establish proper antecedent basis. Moreover, Applicants amend claim 1 to recite "an electrical connection of the element to other elements in the system" to more particularly point out and distinctly claim the subject matter of the present application. Support for this amendment can be found in paragraph [0006] of the specification, which describes that the operator verifies, on the basis of the circuit diagram, how the individual electronic elements of the system are connected to each other. Consequently, the feature cited by the Examiner refers to the electrical connection of the element to other individual elements in the system. Applicants therefore request withdrawal of this indefiniteness rejection.

35 U.S.C. § 102 Rejections

Claims 1-20 stand rejected under 35 U.S.C. §102(b) as anticipated by Welch (U.S. Patent No. 5,230,061, hereinafter "Welch"). Applicants respectfully traverse this rejection.

Claims 10-12 are cancelled, thereby rendering this rejection, as it pertains to claims 10-12, moot. Each of claims 1-9 and 13-20 recites a method, device or system for displaying data of a machine control system wherein, *inter alia*, status data for at least one element of the system are represented in a circuit diagram, which displays, at least for the element, an electrical connection of the element to other individual elements in the system, and wherein the representation of the status

data which have been received for the element occurs in the represented circuit diagram.

Welch does not anticipate the claims at issue because Welch fails to disclose all of the elements recited by the instant claims and, in particular, fails to disclose the display of a representation of received status data in a circuit diagram displaying an electrical connection of the element, for which the status data was received, to other individual elements. Welch shows a method for representing various status and machine function conditions on a suitable display device, but not in a circuit diagram. Instead, Welch discloses showing status data in a compact map representation.

Specifically, Welch describes a clause counter map inference engine that provides a translation of a series of Boolean logic functions into a compact map representation (see Welch abstract). As shown in Fig. 1, and described in column 6, lines 13-39, the clause counter map inference engine forms a component of a programmable logic controller system, wherein a programmable controller 10 comprises a plurality of modules being IC circuit boards adapted to perform a variety of functions in a control system.

A programmable logic controller (PLC) control system is described in Fig. 2, wherein machine input control signals 30 from various sensing devices are input and then processed, as described from column 6, line 66 to column 7, line 2. An interface circuit 40 provides machine output signals 44 for control of various machine functions. The interface circuit may also couple feedback signals from various machine sensing devices which are supplied to the program logic controller 36 through an analog input module 46. Various status and machine function conditions may be displayed on a suitable display device 48 (see column 7, lines 2-15).

As apparent from the summary of Welch, Welch does not describe a method for displaying data of a machine control system, wherein status data for one element of the system are represented in a **circuit diagram**, which displays, at least for the element, an electrical connection of the element to other individual elements in the system, and where the representation of the status data which have been received for the element occurs in the represented circuit diagram.

Indeed, Welch shows a method for representing various status and machine function conditions on a suitable **display device**, but not in a circuit diagram. Welch only discloses process flow sheets, which show the status data in a compact map representation.

Applicants respectfully submit that the Examiner's interpretation on page 4 of the Office action, according to which the block diagram of a PLC system shown in Fig. 3 and described in column 7, lines 12-15, shows the feature of representing a circuit diagram as defined in claim 1, is erroneous. As mentioned above, the suitable display device 48 referred to in column 7, lines 12-15, differs from a circuit diagram, which displays an electrical connection of an element to other individual elements in a machine control system. Further, Welch fails to anticipate the feature of the representation of the status data, which have been received for the element, occurring in the represented circuit diagram. Fig. 8 shows such a circuit diagram where status data of an element are represented.

In contrast to Welch, the claimed method, device and system for displaying data of a machine control system according to the claims at issue represent status data in a circuit diagram (e.g., drawn with a CAD program), allowing an operator to read the status data directly on the represented circuit diagram, so that there is no need to obtain the process flow data separately in a process flow sheet and compare the represented status data with a separate circuit diagram. This allows the operator to avoid operating errors and renders the start-up procedure, maintenance, error search of the machine control system to be more efficient, as the operator obtains a better overview of the system status.

As discussed above, displaying status data in a compact map representation is not the same as displaying status data for at least one element of the system in a circuit diagram, which displays, at least for the element, an electrical connection of the element to other individual elements in the system, and wherein the representation of the status data which have been received for the element occurs in the represented circuit diagram. Thus, Welch does not disclose all of the recited limitations and, therefore, cannot anticipate the claims at issue. For at least these reasons, Applicants request reconsideration and withdrawal of the rejections.

New Claims

With this amendment, Applicants add claims 21-23. Claims 21-23 correspond in scope to canceled claims 10-12. Thus, no new matter is added by these claims. Claim 21 contains the same subject matter as claim 10, but now recites the technical features of a device for displaying data of a machine control system, wherein its subject matter corresponds, in its features, to the subject matter of independent method claim 1. Claim 22 contains the same subject matter as canceled claim 11, but now depends instead from claim 21. Finally, claim 23 contains the same subject matter as claim 12, but now recites a system having all the features of the device in claim 21.

CONCLUSION

Accordingly, all remaining claims are in condition for allowance for the reasons provided above. This response is timely filed as it is accompanied by a petition for a one-month extension of time and a check for the requisite extension fee. Although Applicants believe that no other fees are due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 13-2855 of Marshall, Gerstein & Borun, LLP under Order No. 30071/41004. Should the examiner wish to discuss any remaining issue, Applicants kindly request the examiner to contact the undersigned by telephone at the number given below.

Respectfully submitted,

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